

Translation

# PATENT COOPERATION TREATY PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>1.2057 PCT</b>	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. <b>PCT/DE2004/000248</b>	International filing date ( <i>day/month/year</i> ) <b>12.02.2004</b>	Priority date ( <i>day/month/year</i> ) <b>13.03.2003</b>
International Patent Classification (IPC) or national classification and IPC		
<p>Applicant <b>FORSCHUNGSZENTRUM JÜLICH GMBH</b></p>		

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <b>6</b> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of <b>3</b> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>																									
<p>4. This report contains indications relating to the following items:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;"><input checked="" type="checkbox"/></td> <td style="width: 15%;"><b>Box No. I</b></td> <td style="width: 70%;">Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td><b>Box No. II</b></td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td><b>Box No. III</b></td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td><b>Box No. IV</b></td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><b>Box No. V</b></td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td><b>Box No. VI</b></td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td><b>Box No. VII</b></td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td><b>Box No. VIII</b></td> <td>Certain observations on the international application</td> </tr> </table>		<input checked="" type="checkbox"/>	<b>Box No. I</b>	Basis of the report	<input type="checkbox"/>	<b>Box No. II</b>	Priority	<input type="checkbox"/>	<b>Box No. III</b>	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	<b>Box No. IV</b>	Lack of unity of invention	<input checked="" type="checkbox"/>	<b>Box No. V</b>	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	<b>Box No. VI</b>	Certain documents cited	<input type="checkbox"/>	<b>Box No. VII</b>	Certain defects in the international application	<input type="checkbox"/>	<b>Box No. VIII</b>	Certain observations on the international application
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Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/DE2004/000248

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
- international search (Rule 12.3 and 23.1(b))
  - publication of the international application (Rule 12.4)
  - international preliminary examination (Rule 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

- the international application as originally filed/furnished  
 the description:

pages 1-29 as originally filed/furnished

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

- the claims:

nos. \_\_\_\_\_ as originally filed/furnished

nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19  
07.02.2005 with the letter of 03.02.2005

nos.\* 1-14 received by this Authority on letter of 03.02.2005

nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

- the drawings:

sheets 1/3-3/3 as originally filed/furnished

sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

- a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3.  The amendments have resulted in the cancellation of:

- the description, pages \_\_\_\_\_
- the claims, nos. \_\_\_\_\_
- the drawings, sheets/figs \_\_\_\_\_
- the sequence listing (*specify*): \_\_\_\_\_
- any table(s) related to sequence listing (*specify*): \_\_\_\_\_

4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- the description, pages \_\_\_\_\_
- the claims, nos. \_\_\_\_\_
- the drawings, sheets/figs \_\_\_\_\_
- the sequence listing (*specify*): \_\_\_\_\_
- any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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<b>Box No. V</b>	<b>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</b>
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## 1. Statement

Novelty (N)	Claims	YES
	1 - 14	NO
Inventive step (IS)	Claims	YES
	1 - 14	NO
Industrial applicability (IA)	Claims	YES
	1 - 14	NO

## 2. Citations and explanations (Rule 70.7)

1 This report makes reference to the following documents:

D1: WO 01/00843 A (BASF AG)

4 January 2001 (2001-01-04)

D2: KUBOTA K: "IMPROVED PRODUCTION OF L SERINE BY MUTANTS OF CORYNEBACTERIUM-GLYCINOPHILUM WITH LESS SERINE DEHYDRATASE EC-4.2.1.13 ACTIVITY" AGRICULTURAL AND BIOLOGICAL CHEMISTRY, vol. 49, no. 1, 1985, pages 7-12, XP002287205 ISSN: 0002-1369

D3: US-A-4 528 273 (LOVINGER GERALD G ET AL)

9 July 1985 (1985-07-09)

## 2 Clarity (PCT Article 6)

The expressions "changed", "modified form" and "isoform" used in claim 1 are vague and unclear and leave the reader uncertain as to the meaning of the technical features in question. As a result, the subject matter of said claim is not clearly defined (PCT Article 6).

**Box No. V** **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

Back-reference of claim 6 to claim 4: claim 4 pertains to a protein, not to a nucleic acid, gene structure or vector.

The back-reference of claim 14 to claims 1-8 is incorrect. Claims 1-8 pertain to a protein, not to a nucleic acid, gene structure or vector.

3 **Novelty (PCT Article 33(2))**

D1 discloses (the references in parentheses are to this document):

L-serine dehydratase (SEQ ID NO: 141, coding for a "metabolic pathway protein" MP SEQ ID NO: 142, page 3, lines 11-12) with reduced L-serine dehydratase activity, with an amino acid sequence as per SEQ ID NO: 2 (page 3, lines 18-22; page 5, line 15; for example, "functional disrupted", page 8, lines 6-18), which can thus be considered a 'modified form' of the enzyme claimed in claim 1. Further, microorganisms and processes for the microbial production of L-serine using a nucleic acid coding for said enzyme are disclosed (page 23, paragraph 1; page 35, paragraph 3 to page 37, paragraph 1; page 41, paragraph 2 to page 44, paragraph 1; page 49, paragraph 2; page 51, paragraph 4; page 52, paragraph 2 to page 54, paragraph 1).

D2 and D3 disclose microorganisms in which the nucleotide sequence coding for L-serine dehydratase is mutated and which lack SD(A) -

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**Box No. V** **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**  
activity. Further, processes for the microbial production of L-serine using the indicated enzyme are disclosed.

The present application therefore does not meet the requirements of PCT Article 33(1) because the subject matter of claims 1-14 is not novel within the meaning of PCT Article 33(2).

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**Supplemental Box Relating to Sequence Listing****Continuation of Box No. I, item 2:**

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this report was established on the basis of:
  - a. type of material
    - a sequence listing
    - table(s) related to the sequence listing
  - b. format of material
    - in written format
    - in computer readable form
  - c. time of filing/furnishing
    - contained in the international application as filed
    - filed together with the international application in computer readable form
    - furnished subsequently to this Authority for the purposes of search and/or examination
    - received by this Authority as an amendment\* on \_\_\_\_\_
2.  In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

\* If item 4 in Box No. I applies, the listing and/or table(s) related thereto, which form part of the basis of the report, may be marked "superseded."